

REMARKS

Applicants have amended the original Abstract, such that the presently amended Abstract has only a single paragraph. In view of this amended Abstract, it is respectfully submitted that the objection to the Abstract as set forth in Item 2 on page 2 of the Office Action dated September 2, 2009, has been overcome, and that the required correction has been made.

The objection to the disclosure as set forth in Item 3 on page 2 of the Office Action dated September 2, 2009, is respectfully traversed, in view of the following. Thus, attention is respectfully directed to the Preliminary Amendment submitted June 26, 2006, in the above-identified application, wherein "Claim 1" was deleted from line 15 on page 3 of the original application papers, and -- the above (1) -- substituted therefor. "[T]he above (1)" refers to the method described on page 3, lines 8-14, of Applicants' original application papers. Thus, it is respectfully submitted that Applicants have already deleted the reference to claim 1 at page 3, line 15, so that the required correction has already been made.

Applicants have amended their claims in order to further clarify the definition of various aspects of the present invention. Thus, Applicants have deleted claim 2 without prejudice or disclaimer, inserting claim 5 in the application which is the same as claim 2 but is after claim 4. In view of canceling of claim 2 and substitution therefor of new claim 5, it is respectfully submitted that the objection to claim 2 as set forth in Item 4 on page 2 of the Office Action dated September 2, 2009, has been overcome.

Moreover, Applicants have amended each of claims 3 and 4 to recite that the making of the isoelectric point as previously recited in claims 3 and 4 is performed by

the following (1) or (2): (1) heat-treating a raw material of the *baitang* soup under a condition of releasing vapor generated by the heating into the atmosphere, or (2) adjusting pH of the aqueous phase so as to achieve the recited isoelectric point. Note, for example, page 4, lines 20-26, of Applicants' specification; see also page 7, lines 2-15, and the paragraph bridging pages 7 and 8, of Applicants' specification.

In addition to addition of claim 5, Applicants are also adding new claims 6-13 to the application. Claims 6 and 7, each dependent on claim 3, respectively further defines how the "making" is performed, respectively by the procedure (1) and (2) as in claim 3. Claim 8, dependent on claim 3, recites that the isoelectric point of 30 wt% or more of the proteins in the aqueous phase of the *baitang* soup is made 1.5-4.0 lower than the pH of the *baitang* soup; and claim 9, dependent on claim 8, recites that the isoelectric point of 40% or more of the proteins contained in an aqueous phase of the *baitang* soup is made 1.5-4.0 lower than the pH of the *baitang* soup. Claim 10, dependent on claim 3, recites that the isoelectric point of 40% or more of the proteins contained in an aqueous phase of the *baitang* soup is made at least 1.5 lower than the pH of the *baitang* soup. Claims 11 and 12, each dependent on claim 4, respectively recites that the aqueous phase has been concentrated so that a solid content therein is 10-50%; and recites that the oil and fat are added so that the concentration thereof is 0.5–60% (v/v). Claim 13, dependent on claim 3, recites that the pH of the *baitang* soup is 6.0-9.0.

In connection with newly added claims 6-13, note, for example, page 4, lines 16-26; page 5, lines 19-22; page 8, lines 26-31; and page 9, lines 31-33, of Applicants' specification.

Applicants respectfully submit that all of the claims presented for consideration by the Examiner patentably distinguish over the teachings of the references applied by the Examiner in rejecting claims in the Office Action dated September 2, 2009, that is, the teachings of the U.S. patent documents to Shoat, et al., Patent No. 3,928,633 and to Fujimoto, et al., Patent Application Publication No. 2007/50110865, and Japanese Patent Document No. 5-3772 (Watanabe), under the provisions of 35 USC 103.

It is respectfully submitted that these references as applied by the Examiner would have neither disclosed nor would have suggested such a method for producing *baitang* soup, or a method for improving emulsion stability of such soup, including, *inter alia*, making the isoelectric point of the specified amount of proteins contained in the aqueous phase of such soup at least 1.5 lower than the pH of such soup by either (1) heat-treating a raw material of such soup under a condition of releasing vapor generated by the heating into the atmosphere, or (2) adjusting pH of the aqueous phase so as to achieve the isoelectric point of 30 wt% or more of the proteins contained in the aqueous phase being at least 1.5 lower than the pH of the *baitang* soup. Note claim 3; see also claim 4.

In addition, it is respectfully submitted that these applied references would have neither disclosed nor would have suggested such method for producing such soup as in the present claims, having features as discussed previously in connection with each of claims 3 and 4, and, moreover, wherein the soup is produced by steps including separating an oil phase from a meat extract, adding oil and fat to the resulting aqueous phase to obtain a mixture, and mixing and emulsifying the mixture to prepare such soup. See claim 4.

In addition, it is respectfully submitted that the teachings of these applied references would have neither disclosed nor would have suggested such method as in the present claims, having features as discussed previously in connection with claims 3 and 4, and, moreover, wherein the aqueous phase obtained by separating the oil phase from the meat extract is concentrated (see claim 5), in particular, wherein the aqueous phase has been concentrated so that a solid content therein is 10-50% (see claim 11); and/or wherein the isoelectric point of 30 wt% or more of the proteins contained in the aqueous phase of such soup is made 1.5–4.0 lower than the pH of such soup, as in claim 8; and/or wherein the isoelectric point of 40% or more of the proteins contained in the aqueous phase of the soup is made 1.5–4.0 lower (see claim 9), or is made at least 1.5 lower (see claim 10), than the pH of such soup; and/or wherein the oil and fat are added so that the concentration thereof is 0.5-60% (v/v) (see claim 12); and/or wherein the pH of such soup is 6.0-9.0 (see claim 13); and/or wherein the making of the isoelectric point of 30 wt% or more of the proteins to have the specified value lower than the pH of the soup is performed by the heat-treating under the condition of releasing vapor, as in claim 6, or is performed by the adjustment of the pH, as in claim 7.

The present invention is directed to a method for producing *baitang* soup, and for improving emulsion stability thereof.

When *baitang* soup is subject to heat sterilization, a problem arises that the emulsion stability decreases with time. As techniques for avoiding such decrease in emulsion stability, various materials such as starch, gelatin, emulsifiers, etc., are added; however, addition of these substances may cause deterioration of texture and taste, and reduction of operability.

It is also known to allow two kinds of gelatin having different isoelectric points to be contained in the soup as an emulsifier; however, this technique has the problem that the two kinds of gelatin must be added.

Thus, it is still desired to provide a method for producing *baitang* soup with high emulsion stability, which can be produced by a relatively simple method.

Against this background, Applicants have accomplished this objective by the present method. Applicants have found that where the isoelectric point of 30 wt% or more of the proteins contained in the aqueous phase of the *baitang* soup is at least 1.5 lower than the pH of the *baitang* soup, and by providing such isoelectric point by either (1) heat-treating a raw material of the *baitang* soup under a condition of releasing vapor generated by the heating into the atmosphere, or (2) adjusting the pH of the aqueous phase, objectives of the present invention are achieved, and a relatively simple process can be used for improving emulsion stability of the produced *baitang* soup.

Thus, as described on page 4, lines 20-23 of Applicants' specification, by releasing the generated vapor into the atmosphere during heat treatment, it is easy to make the proportion of proteins having an isoelectric point of at least 1.5 lower than the pH of the *baitang* soup to be 30 wt% or more. Moreover, a method of adjusting pH of the aqueous phase is a relatively simple technique to fulfill the recited isoelectric point, as described in the paragraph bridging pages 7-8 of Applicants' specification.

Watanabe discloses an emulsifying agent which comprises (A) a gelatin having 6.5-9, preferably 8-9 isoelectric point and (B) a gelatin having 4.5-5, preferably 5+ or -0.3 isoelectric point in a ratio 95:5-10:90 by weight. This patent

document discloses that a gelatin treated by an acid is usually used as the component (A) and a gelatin treated with an alkali as the component (B). In connection with Watanabe, see page 2, lines 27-32, of Applicants' specification, for a discussion of Watanabe and disadvantages of the process described therein.

Thus, in Watanabe, an emulsion was obtained by mixing two types of gelatins to obtain a mixed gelatin, adding the mixed gelatin to the material including oil components, and mixing and emulsifying. This patent document is primarily related to a diluent soup for pork bone noodles, and is described on page 2, lines 27-32, of Applicants' Specification, including description of problems in connection therewith and that it is necessary to previously provide two kinds of gelatin. It is respectfully submitted that this reference does not disclose, nor would have suggested, making the isoelectric point of 30 wt% or more of the proteins contained in the aqueous phase of the *baitang* soup at least 1.5 lower than the pH of the *baitang* soup, or providing such isoelectric point of at least 30 wt% of the proteins to be that set forth in claim 1 by the techniques as in the present claims, or advantages achieved thereby.

In connection with claim 3 and claims dependent thereon, it is respectfully submitted that the additional teachings of Shoat, et al. would not have rectified the deficiencies of Watanabe, such that the presently claimed invention as a whole would have been obvious to one of ordinary skill in the art. Thus, Shoat, et al. has as an object thereof to provide a new product form for the dipeptide APM (methyl ester of L-aspartyl-L-phenylalanine), wherein the product is both soluble and flowable and has a controllable density. See column 1, lines 45-52. The product is formed by creating a hot melt (below 370°F) capable of forming a relatively

amorphous matrix within which APM crystals are dispersed discretely and thereafter causing that hot melt to undergo cooling to permanently fix the dipeptide in a form wherein the APM is a dispersed phase. Note, column 1, lines 53-62. See also, column 2, lines 13-25; and see also the paragraph bridging columns 2 and 3. As applied by the Examiner, note column 5, lines 23 and 24 of this patent, disclosing a class of fusing agents for the matrix in which the APM particles are dispersed, including protein extracts of animal hide, hoof, bone, or feather in the form of gelatin or heratin.

Even assuming, *arguendo*, that the teachings of Watanabe and of Shoat, et al. were properly combinable, such combined teachings would have neither disclosed nor would have suggested the presently claimed subject matter, including wherein the isoelectric point of 30 wt% or more of the proteins contained in the aqueous phase is made at least 1.5 lower than the pH of the *baitang* soup, or techniques to provide such isoelectric point of 30 wt% or more of the proteins contained in the aqueous phase relative to the pH of the soup, and advantages thereof.

Thus, it is emphasized that Watanabe discloses an emulsifier comprising two types of gelatins (acid treated gelatin and alkali treated gelatin) of a specified ratio, only describing that the pH is arranged between the isoelectric points of the two types of gelatins. It is respectfully submitted that there is no description, or suggestion, of the condition that the isoelectric point of 30 wt% or more of the proteins contained in the aqueous phase is made at least 1.5 lower than the pH of the *baitang* soup, or of the two specific techniques recited in the present claim for realizing this condition which achieves the simplified method of the present invention.

It is respectfully submitted that one of ordinary skill in the art concerned with in Watanabe, and even in light of the teachings of Shoat, et al., would not have readily conceived of adjusting the proportion of the proteins having an isoelectric point at least 1.5 lower than the pH of the *baitang* soup relative to the total proteins contained in the aqueous phase to the specific range, that is, 30 wt% or more, more particularly, for the 40 wt% or more as in claim 10, and advantages thereof.

It is respectfully submitted that the additional teachings of Fujimoto, et al. would not have rectified the deficiencies of the combined teachings of Watanabe and of Shoat, et al., such that the presently claimed invention as a whole would have been obvious to one of ordinary skill in the art.

Fujimoto, et al., discloses a method for producing a pork bone extract, and for sterilizing a pork bone extract. The method, in general, includes ultra high temperature sterilization at a temperature of 130°C or below. See paragraph [0012] on page 1 of this patent document. More specifically, this patent document discloses that using pork bone and pig feet as a raw material, extraction is carried out using an extraction medium, the extraction medium having any pH but preferred is a pH of 6-10. After the extraction operation, a liquid extract is obtained according to a solid-liquid separation method, and the obtained liquid extract can be used as the pork bone extract. See paragraphs [0014]-[0018] and [0021] on pages 1 and 2 of this patent document. This patent document then goes on to describe that the liquid extract from which oil and fat has not been separated or its concentrate may be directly subjected to emulsification using a TK homomixer, colloid mill, high pressure homogenizer, votator, ultrasonic generator, etc.; and that in the case of the liquid extract from which oil and fat have been separated or its concentrate, emulsification

is carried out after addition of an appropriate amount of the separated oil and fat, or an animal oil and/or fat such as bone oil, lard, chicken oil, beef tallow, or milk fat, or a vegetable oil and fat such as grapeseed oil, soybean oil, palm oil, corn oil, and rice bran oil, among other oils. Note paragraph [0024] on page 2 of this patent document; see also paragraph [0026] on page 2 of this patent document.

It is emphasized that Fujimoto, et al. is primarily concerned with sterilizing utilizing ultra high temperature sterilization. It is respectfully submitted that the teachings of this reference, together with the teachings of Watanabe and Shoat, et al., have neither disclosed nor would have suggested such method as in the present claims, including making the isoelectric point of 30 wt% or more of the proteins contained in the aqueous phase of the soup at least 1.5 lower than the pH of the soup, or the techniques recited in the present claims for making the isoelectric point of 30 wt% or more of the proteins contained in the aqueous phase to be that set forth in the present claims, and advantages thereof.

The conclusion by the Examiner concerning obviousness of the isoelectric point of at least 30 wt% of the proteins contained in the aqueous phase as in the present claims, in the sentence bridging pages 3 and 4 of the Office Action dated September 2, 2009, is respectfully traversed. Again, it is emphasized that Watanabe discloses providing a mixture of two gelatins; and it is respectfully submitted that such disclosure as to such mixture does not teach, nor would have suggested, the isoelectric point as in the present claims, or advantages thereof, much less the techniques for achieving such isoelectric point as in the present claims, and advantages thereof, wherein a simplified method is achieved.

In view of the foregoing comments and amendments, reconsideration and allowance of all claims presently pending in the above-identified application are respectfully requested.

Applicants request any shortage of fees due in connection with the filing of this paper be charged to the Deposit Account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (case 1021.46326X00), and please credit any excess fees to such Deposit Account.

Respectfully submitted,

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